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For exchange of information on nutrition education and school lunch activities

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THE FOOD GUIDE . . . A TOOL FOR TEACHING NUTRITION

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The science of nutrition, like other sciences, is complex. But individuals need not master the intricacies of this highly technical subject to be well nourished. Nutritionists have devised a teaching tool—a food guide—which translates knowledge of nutritional needs and nutrients in foods into a simple plan for directing food choices. By following such a guide, most persons can select a nutritionally good diet.

Most guides are designed for widespread use rather than to meet the needs of a specific group. Hence, some direction in their use is helpful when teaching various groups about food selection. Many of our readers have requested illustrations of how such guidance can be given.

In this issue of NCN, we offer suggestions on the use of food guides in a variety of nutrition programs. These suggestions demonstrate the versatility and flexibility of guides when used by knowledgeable professional workers. The USDA's four-food-group plan, the Daily Food Guide, is used in the illustrations. Other reliable guides could be chosen. It is wise to select one guide and use it consistently.

THE USE OF GUIDES IN COMMUNITY PROGRAMS

As The Only Tool

If necessary, adults can be taught in a single session how to use a guide in making wise food selections. While the information that can be judiciously presented at one time is limited, certain ideas can be emphasized.

- **That eating is fun, one of our most enjoyable experiences in daily living;**
- **that what we eat is important since foods are the source of the many nutrients needed to keep the body functioning and in good working order;**
- **that it is not difficult to choose the right kinds of foods for health if we have a guide to follow.**

To use a food guide wisely requires some knowledge of (1) foods included in each group and (2) minimum number and size of servings from each group suggested for a day. Suggestions on how to bridge the gap between food selection and meal planning are also helpful.

Information on foods within groups of the Guide and on number and sizes of servings is provided in USDA's Leaflet 424, "Food for Fitness . . . a daily food guide," designed for distribution to the general public.

Variety of choices. A series of selections can be made within the framework of the Guide to show the wide variety of choices possible. Food models or other visuals could be used to illustrate such selections. The following assortment of foods might be chosen as one example of minimum choices from the four food groups for a day:

Milk group.—2 cups milk

Meat group.—3 ounces lean beef; 2 ounces tuna fish.

Vegetable-fruit group.—½ cup tomato juice; ½ cup coleslaw; 1 medium carrot; ½ cup mashed potatoes.

Bread-cereal group.—1 ounce enriched or whole grain ready-to-eat cereal; 1 slice whole wheat bread; 2 slices enriched bread or rolls.

Certain foods other than citrus fruits can be chosen for vitamin C to give variety (see Leaflet 424). Usually larger quantities of these foods than of the citrus are needed to give the same amount of this essential nutrient. This is illustrated in the above selections where both tomato juice and cabbage, each dependable though less rich sources of vitamin C than citrus fruits, have been chosen to safeguard the supply of the vitamin.

You can get variety by serving foods in different forms and by preparing them in different ways. Fruit, for example, can be fresh, frozen, canned or dried; it can be eaten out of hand, in sauce, salads, pies, and the like.

Serving sizes. Amounts of foods from the different groups to count as a serving are suggested in the given example:

1 cup of milk
2 to 3 ounces of lean meat
½ cup vegetable or fruit (or a piece as ordinarily served such as a medium apple, orange, banana)
1 slice bread, 1 ounce ready-to-eat cereal (¾ to 1¼ cups), (½ to ¾ cup cooked cereal)

Rounding out meals. Most persons want and need more food for the day than the minimum servings from the basic groups . . . more of the same types of foods specified in the Guide as well as some not included among the four groups. Food energy needs limit the quantity of this additional food.

A menu has been developed to show how the particular assortment of foods mentioned earlier can be fitted into meals. Other foods have been added to complete the nutritional goals suggested for the National Research Council's 25-year-old reference woman.

MORNING

Tomato juice	½ cup
Enriched ready-to-eat cereal	1 ounce (¾ to 1¼ cups)
Whole wheat toast	1 slice
Butter or margarine	1 teaspoon
Sugar	1 teaspoon
Milk	1 cup

NOON

Chicken soup	1 cup
Crackers	2 each
Tuna salad	
Tuna fish	2 ounces
Salad dressing	2 tablespoons
Lettuce	1 large leaf
Carrot sticks	1 medium carrot
Enriched roll	1 medium
Butter or margarine	1 teaspoon
Brownie	1 medium
Milk	1 cup

EVENING

Minute steak	3 ounces lean meat
Mushroom gravy	¼ cup
Mashed potatoes	½ cup
Green snap beans	½ cup
Coleslaw	½ cup
Enriched roll	1 medium
Butter or margarine	1 teaspoon
Apple brown betty	¾ cup
Lemon sauce	2 tablespoons

SNACK

Banana	1 medium

The kinds and amounts of foods listed meet the recommended allowances for the reference woman with the exception of food energy. About a 150-calorie margin has been allowed which might be used for snacks in addition to the banana; or for items, such as sugar for a beverage, or jelly to go on the toast at breakfast; or for other extras.

Fitting the basic selections into meals provides an opportunity to mention some worthwhile dietary practices . . . the importance of a good breakfast, with a fourth to a third of the day's foods included in the morning meal . . . the fact that we are more likely to meet our daily vitamin C quota if we have a source of this essential at breakfast . . . the desirability of having some animal protein food in each meal . . . and the supplementary effect of animal and vegetable proteins, as in milk and cereals.

Choices of actual dishes to include in menus will necessarily differ with different groups. Regional food preferences, cultural food patterns, economic limitations and the like must be taken into account. For example, people with limited money for food may prefer or be obliged to use familiar, and often "plain," foods. Those with more money to spend on food may like more interesting illustrations . . . mixed dishes, gourmet foods, attractive garnishes, out-of-season items, more expensive forms of food.

Adjusting menu for various age groups. Homemakers who plan and prepare meals for family members with different nutritional requirements probably would appreciate guidance in how to make adjustments in food quantities.

As *adults* grow older some nutritional needs, and hence food needs, change to some extent. Fewer calories are required to keep the body functioning. Physical activity of older individuals usually decreases, also, which lowers further the number of calories required. Most other nutritional goals remain at the earlier adult levels except for essentials such as thiamine, the allowance for which is related to that of food energy. Hence, the four-food-group plan is still an appropriate guide for older folks to follow in making food selections.

Simple adjustments can be made in a menu to bring the calorie content more in line with the needs of older individuals. For instance, the food energy provided by the evening meal presented earlier can be lowered by about 200 calories simply by substituting mushrooms for mushroom gravy to accompany the meat and by omitting the sauce for the dessert.

Chewing sometimes becomes a problem later in life. When this occurs some foods can be prepared another way rather than omitted entirely from the diet. Foods that are difficult to chew can be chopped, diced or ground.

Young children need smaller, rather than fewer, servings from the basic groups. They also need more milk than adults. Foods should be simply prepared because their sense of taste is acute. For a 4- to 5-year-old, the quantities of food in the evening meal might be reduced as indicated, the meat served without gravy, and the dessert without sauce.

Minute steak	1½ ounces lean meat
Mashed potatoes	¼ cup
Green snap beans	¼ cup
Coleslaw	¼ cup
Enriched roll	1 medium
Butter or margarine	1 teaspoon
Apple brown betty	⅓ cup
Milk	¾ cup

Milk is included to help bring the total for the day to at least 3 cups.

A 13- to 15-year-old *teenage girl,* on the other hand,

needs more food energy and larger amounts of most nutrients than the 25-year-old reference woman. The addition to the day's menu of only 2 cups of milk and a hard-cooked egg to accompany the tuna salad at noon would supply the nutrients to complete her needs. The original menu furnishes generous quantities of several essentials.

Other adjustments would be required for an older girl whose food energy allowance is lower than, but whose other needs are similar to, those for the 13- to 15-year-old.

For *teenage boys* and the *younger, more active men,* larger portions or seconds of foods selected to meet the nutritional goals of other family members can be served. The boy would also need extra milk. For a teenager the evening meal might consist of:

Minute steak	4 ounces lean meat
Mushroom gravy	⅓ cup
Mashed potatoes	⅔ cup
Green snap beans	⅔ cup
Coleslaw	⅔ cup
Enriched roll	2 medium
Butter or margarine	2 teaspoons
Apple brown betty	¾ cup
Lemon sauce	2 tablespoons
Milk	1 cup

A planned-for-snack would help to meet the higher nutritional needs of these young people.

Importance of the food groups. With the teaching about food selection, the nutritional importance of each of the basic food groups could be brought out—the reasons why they are emphasized in the Daily Food Guide.

Foods from the milk group are relied on to provide most of the calcium recommended for the day. These foods are also dependable sources of high-quality protein and contribute worthwhile amounts of riboflavin and other vitamins and minerals.

Meat, poultry, fish, and eggs from the meat group are valued for the top-quality protein they furnish. As a group they are also notable sources of iron and the B-vitamins—thiamine, riboflavin, and niacin. The alternates for these foods, dry beans, dry peas, and nuts, are important for the same nutrients although the protein they furnish is not of quite the same high quality.

Nearly all of the vitamin C and a large share of the vitamin A value of the diet comes from fruits and vegetables. Yet only a relatively small number can be counted on as really good sources of either of these two vitamins. To protect the nutritional quality of the diet, choices are directed toward the dark-green and deep-yellow ones for vitamin A value, and to citrus fruits and certain others that are among the better sources of vitamin C.

Whole grain, enriched, and restored cereal products are depended on to provide protein, iron and the B-vitamins.

Fats, oils, sugars, and sweets are not emphasized in the Guide because they are commonly found in the diet anyway. Their main nutritional contribution is in calories, though some of the fats and oils do provide vitamin A and some furnish essential fatty acids.

For easy use, information of this nature can be summarized in a chart similar to the one which follows. This chart is based on data obtained from a nation-wide survey of family food consumption carried out in 1955. The chart is for the use of the teacher and should not be presented to the lay groups.

Major contributions of food groups of the Daily Food Guide to diets of families in the United States

Food group	Percent of total in diet		
	40 or more	20-40	10-20
Milk group	Calcium Riboflavin	Protein	Vitamin A value Thiamine Food energy
Meat group	Protein Iron Niacin	Thiamine Riboflavin Vitamin A value Food energy	
Vegetable-fruit group.	Vitamin A value Vitamin C		Calcium Thiamine Iron Riboflavin Niacin Food energy
(citrus fruits)		(Vitamin C)	
(dark-green and deep-yellow vegetables).		(Vitamin A value)	
Bread-cereal group: Whole grain, enriched, restored.		Iron Thiamine Niacin	Protein Calcium Riboflavin Food energy
Other foods		Food energy	Vitamin A value

With Other Tools

Calorie table. Guides are so designed that no upper limit of daily food quantities is suggested. This is necessary because of individual differences in nutritional needs. It is up to the individual to adjust food intake within the framework of a guide to meet the body's demands for energy. Too often the appetite is not keyed to actual needs and unwanted weight gain or, perhaps, loss follows.

For those interested in weight control a more realistic approach to food selection and meal planning would be to estimate calorie needs and to use a table of calorie values as a help in making selections to meet these needs. Such a table is found in USDA's Home and Garden Bulletin No. 72, "Nutritive Value of Foods," or No. 74, "Food and Your Weight."

To get a general idea of daily calorie needs, a simple rule can be followed. Multiply the desirable weight, obtained from a suitable height-weight table, by 21 for a man and by 18 for a woman. This gives the approximate number of calories used daily by a moderately active adult.

About one-fourth more calories will be needed if very active; one-fourth less if quite sedentary.

This rough estimate provides a starting place, at least, for teaching how to select the kinds and *amounts* of foods that lead to a good diet and also provide food energy to obtain or maintain desirable weight. Some adjustments in this figure may be required to get the right calorie level for the individual.

Calorie tables provide information needed to compare foods within groups as sources of food energy to help in making selections. To illustrate, a cup of skim milk provides about 90 calories; whole milk, 165. Another example might be the effect of trimming fat from meat. Such a practice might reduce by about 100 calories the food energy provided by a 3-ounce serving of beef pot roast.

Food composition table. A table of food composition such as USDA's Home and Garden Bulletin No. 72 can be used along with the guide to show how foods compare as sources of certain key nutrients. Food within each of the basic groups though important for the same key nutrients vary somewhat in the amounts provided by a serving. To emphasize better food sources in a group, equivalent amounts needed to furnish a given quantity of an essential can be estimated. For example, it would take about 1½ ounces of cheddar cheese, 1½ cups of cottage cheese, or nearly 2 cups of ice cream to provide as much calcium as 1 cup of milk.

THE USE OF GUIDES IN SCHOOLS

In The Elementary School

Children in the *primary grades* do not plan their own diets. They accept or reject the foods presented to them by parents and also often by school lunch staff.

Educational research indicates that we do not tend to retain information we do not use. You cannot expect young children to retain information on food selection when this does not relate to their responsibilities.

Attempting to teach children material beyond their comprehension is, in fact, a detrimental practice. Children can be taught to memorize information they do not really understand. For example, you can teach a smart 6-year-old to recite the Pythagorean theorem, but that does not mean he can reason his way through a geometry problem. What does happen, however, is that children tend to remember key words or terminology and when they should be ready to learn to select foods with the help of a guide, it is "old stuff" and they are too bored to pay attention.

Earliest teaching should be in terms of what children do—they accept or reject the food presented to them. In the primary grades, then, we work on attitudes toward food and increasing the number of foods children know and enjoy—by taste, touch, and name.

Here the guide is specifically a teacher reference. A working knowledge of the guide—including some of the reasoning behind its development—helps teachers emphasize foods most needed by these children.

If the teacher uses the plan to guide her own food selections, she will be able to set a good example for her pupils —one of the best ways to promote learning.

In the *middle grades* (4-6) children should be learning (1) that the kind and amount of food makes a difference, and (2) to make some selections for themselves. They can begin to group foods they have learned about and develop a guide—the four food groups.

The social sciences provide good exercise material for this purpose. As children learn about other countries and their food supplies, the information becomes more meaningful if foods are grouped into typical breakfasts, for example. Foreign children entering schools where such activities are a part of the curriculum, are less likely to be teased or ostracized because they are different.

The guide for this group is first a teacher reference, and as children progress through these grades, becomes a teacher-pupil reference. Nutrition teaching in the elementary school deals primarily with foods. The middle grade activities, however, are such that, by the end of the sixth grade, boys and girls will know something about the key nutrients—why they are needed and major food sources.

In The Secondary School

Boys and girls are now making more selections for themselves. They can be taught food selection with a guide, as a tool, in much the same manner as any other lay group.

Hopefully, before students finish secondary school, nutrition information relating to biological and physiological processes will be included in science and health courses.

IN CONCLUSION

As our readers requested, we have limited our attention to the use of guides in terms of kinds and amounts of food necessary to meet nutritional needs of people.

Workers in community programs also find it necessary to teach (1) how to get the most nutrition for the food dollar and (2) how to prepare foods to conserve the nutrients. They may also need to know how to adapt or to develop a guide for use with different cultural groups.

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